

THE CAT'S WHISKER

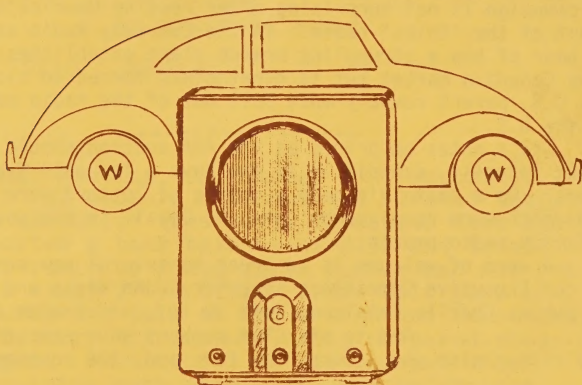
BULLETIN OF THE CANADIAN VINTAGE WIRELESS ASSOCIATION

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A.D. CHALLONER Editor

Volks radio



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The Cat's Whisker is published quaterly and distributed to members of the Canadian Vintage Wireless Association. The price of this publication is included in the annual dues of \$5 payable to the Treasurer on 1 October.

EDITOR'S NOTES

Highlights of this issue include another fine article by Maurice Chaplin on the 'Volkswagen' of radio and an original account by member Harold Cronk of the story of Eveready Radio in Canada. The success of Hitler's propaganda campaign is not surprising after reading Maurice's account of the 'Volks' radio. In the Eveready Radio story we hear of how a struggling branch plant establishes a thriving Canadian market but is nonetheless forced to close when its U.S. parent company must pull out of the radio market in the U.S.

Sid's notes on prices at the AWA auction should be of great interest, especially if you have a few used Myers tubes! On a nostalgic note a couple of letters were reprinted which were received by James Mc Dowall in his youth from a famous radio oracle.

A word of welcome is in order to several new members of our Executive Committee: secretary John Wicks and Members at Large, Charlie Catalano, Bert de Kat, and Graham Nielsen. And to all CVWA members your executive and editor wish you a Happy New Year and, the postman willing

MERRY CHRISTMAS

CVNA General Meeting

Speaker

Auction

SATURDAY JANUARY 21

110 RUMSEY RD. EAST YORK

PROGRAM

- 12:00 Equipment for auction is out
for preview and cataloguing
- 1:00 Meeting begins; general business
- 1:30 Talk by Ernie Welling on history
of recorded sound
- 2:30 Auction

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Annual Meeting, 22 October 1977 report

37 members attended and elected their new executive (see p.1). Treasurer Jack Knott reported a bank balance of \$258 and total membership of 292; a large number had not yet paid their 77-78 dues. Andre Nolf gave an interesting talk on the design and construction of battery eliminators using prepared view graphs. Photocopies of his presentation containing many schematics and references were handed out to the members. Refreshments followed and then an extensive auction conducted by our capable auctioneer, Barry Coleman.

"Volks radio"

As the Hitler Government swept themselves into power in Germany in 1933 their newly formed Ministry of Propaganda and Enlightenment took over control of broadcasting from the Post Office. Anxious to get the Party message into every German home it was realized that very cheap radio receivers must be made available. The Heinrich Hertz Institute of Berlin was given the task of designing suitable radios with Professor Leithauser responsible for developing the circuit to be used. It was necessary, he said later, that the receiver should be selective and powerful enough to guarantee reception at all times of the day. The receiver must not, however, be "too good", otherwise the listener might hesitate to buy a more expensive receiver even if he could afford it, thus alienating the receiver manufacturing industry.

Hitler met with representatives of the leading radio manufacturers and decreed that some 20,000 receivers must be constructed and placed on the market within a limited period, the cost of each not to exceed 75m. (approx \$15).

The final arrangements were for the Manufacturer's Association to provide its members with the drawings developed by Professor Leithauser. Each manufacturer supplied the Institute with a prototype which had to be approved before production started. To meet the target selling price both manufacturers and dealers had to agree to large cuts in normal profit margins.

The 1933 Berlin Radio Show, the 10th consecutive Exhibition since Germany began broadcasting, received greater publicity and provoked more interest than any previous Radio Exhibition with the introduction of the People's Radio being the most spectacular feature. The receivers were of three types - one battery operated, one for AC line

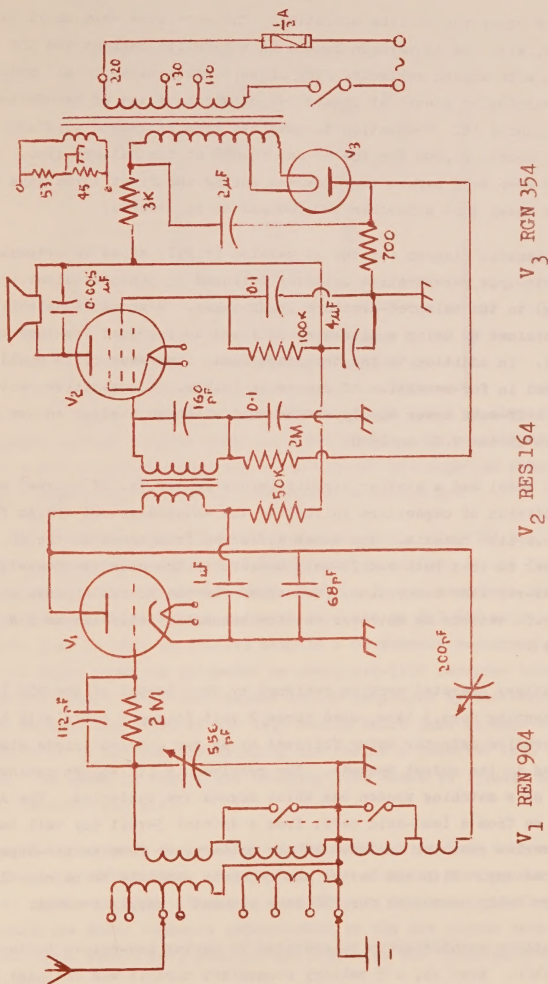


Fig.1. 1933 Volksempfänger Model VE301 W

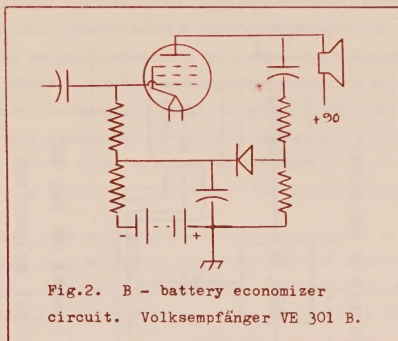
and the other for DC line operation. The receivers were small table models, with the AC version housed in a bakelite cabinet and the others with wooden cabinets. The chassis was similar in all models and practically identical regardless of which of the 28 manufacturers had produced it. Production targets had been increased to 75,000 for the AC model, 15,000 for the DC and 10,000 of the battery type. Some 30,000 were sold before the Show and during the first three days demand was so heavy that a further 100,000 had to be ordered.

The schematic diagram for the AC version (Fig.1) shows an orthodox Reinartz-type regenerative detector followed by pentode output (3 watt rating) to the balanced-armature loudspeaker. Reasonable selectivity was obtained by using a Litz-wire coil and an improved low-loss tube socket. In addition to the broadcast band, long-wave coils could be switched in for reception of Zeesen on 191kHz. The negative-rectification half-wave power supply was unusual although similar to one used by Fada in the U.S. in 1928.

The DC model had a similar circuit (minus rectifier, of course) with the addition of capacitors to isolate the antenna-ground system from a possible live chassis. The tubes differed from those in the AC receiver in that both had 20-volt heaters in the usual series-with-ballast-resistor connection. (The spec. for the DC radio shows an REN-1820 r.f. tetrode as detector but the schematic indicates an REN 1821 triode).

The battery operated version designed by Herr Nestel of the RRG (State Broadcasting Corp.) labs, used three 2 volt filament tubes with the regenerative detector being followed by an r-c coupled triode similarly coupled to the output pentode. The receiver in its wooden cabinet stood on a matching wooden box which housed the batteries. The A supply could be from a lead-acid cell, from a special 3-volt dry cell battery with series resistor included in the battery, or from an air-depolarised battery. With the latter the receiver was said to be capable of 3 hours daily operation for 250 days without A supply renewal.

The battery manufacturers co-operated by making low-priced batteries available. Even so, a B battery economiser circuit was included as shown in simplified form in Fig.2. The output tube was over-biased



so that in the absence of signal the plate-current idled at about 2mA. Audio output voltage changes were rectified by the metal rectifier so that the positive voltage produced could off-set the negative potential from the C supply to increase plate-current to around 6mA.

In 1933 there were 344,311 "Peoples" receivers sold. In 1934 the Ministry of Propaganda warned dealers to make no attempt to use "sell-up" tactics on prospective Volksempfänger owners. In the same year the price was reduced which helped sales to increase to 811,619 units. Sales were down in 1935 to 470,743 despite a Government supported program for a fixed trade-in allowance on every pre-1930 receiver traded in. (Some 373,000 older units were handed in and destroyed by the Ministry). An AC/DC version was shown at the 1935 Berlin Radio Show as well as a converter unit by Korting for changing the People's receiver into a superhet. As shown in Fig.3, the receiver when tuned to 375kHz. acted as i.f., detector and a.f.

Many powerful receivers were being manufactured during this period for those who could afford them. Telefunken, for example, showing some 40 different models in 1936. However, listening to transmissions from other countries where comments unfavourable to the new regime were broadcast could result in 2 year prison sentences for "contemplated high treason".

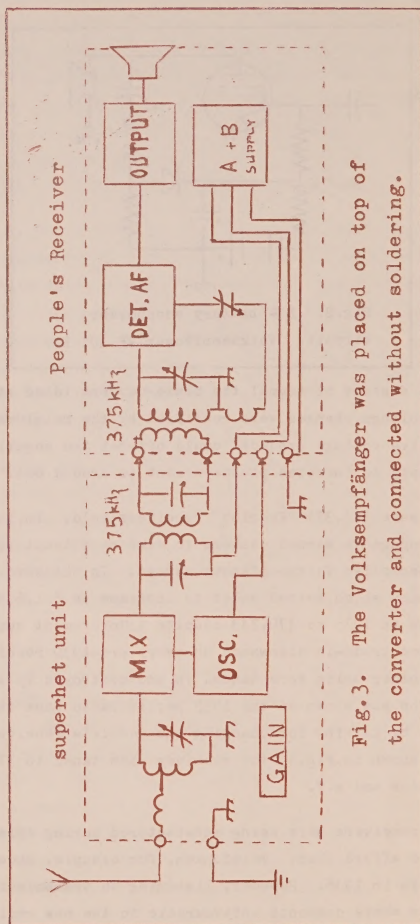


Fig.3. The Volksempfänger was placed on top of the converter and connected without soldering.

Goebbels announced details of an improved Volks in 1937 and it was introduced at that year's Berlin Show. Externally the same except for the dial being re-calibrated with station names instead of arbitrary numbers, the chassis now had a tetrode detector for better sensitivity and a re-worked loudspeaker, still, however, a balanced-armature. The new receiver was economical to operate consuming 18 watts from a 220 volt supply. Total sales now reached 2,652,223 (compare with Philco's U.S. total "baby grand" or "cathedral" model production of 2,029,032)

The 1938 Berlin Show produced another variation with a moving-coil speaker but the real sensation was a new "small" receiver - the Kleinempfänger - incorporating a number of cost-cutting and material-conserving features so that it could be sold at half the price of its stable mate. The circuit was still a regenerative-detector with a.f., but now used a twin-triode. The usual type of balanced-armature loudspeaker was fitted but amplitude-distortion was reduced by adding negative-feedback around the output stage. The receiver was an indifferent performer and was quickly altered to allow a twin-tetrode to be used. (Fig.4). A moving-coil speaker was substituted and overall "loudness" improved by removing the feedback circuit. Sales of this receiver pushed the total for Volksempfänger to just over 3 million.

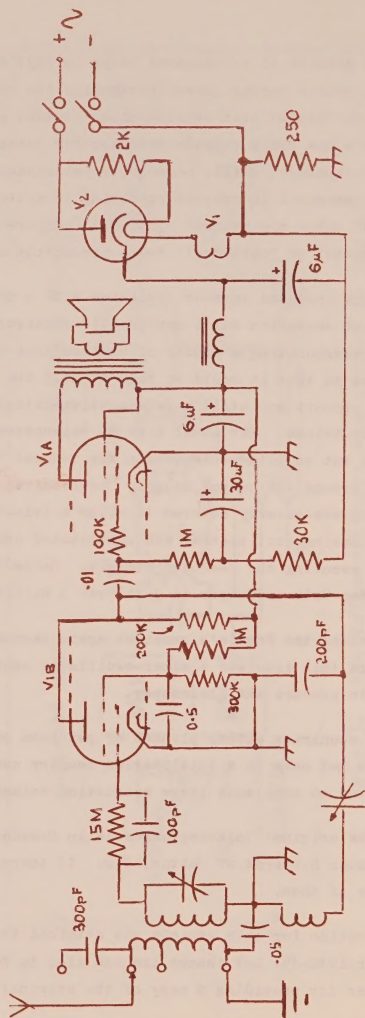
To complete the series the People's receiver again became a 3 tube chassis in 1939 but this involved a mixer-oscillator stage ahead of the twin-tetrode to produce the Kleinsuper.

A number of other countries either planned or put into production small standard receivers but only in a totalitarian country could the peoples "choice" be directed to make such large production volume possible.

At least one of the original Volksempfänger is in Canada, in the collection of CVWA member E.Eberdt of Sutton, P.Q. If there are others I would like to hear of them.

Most of the information for this article was obtained from issues of Wireless World for 1932-39, but thanks are due also to fellow-CVWA member Herman Weber for providing a copy of the original schematics.

****by Maurice Chaplin



V_1 - VELL V_2 - VY2

Fig. 4. The Kleinempfänger

GOLD DUST C.V.W.A.

THE A.W.A AND YOUR GOLD DUST EDITOR GOES TO
THE FORD MUSEUM COMPLEX GREENFIELD
VILLAGE.

DEARBORN MICHIGAN U.S.A.

Ten years ago the Antique Wireless Association of Rochester, N.Y. was invited to hold their annual Conference at the Ford Foundation Museum, and now ten years later another invitation was accepted, and a wonderful time was had by 400 A.W.A. Members and Friends.

The Luncheon and Annual Dinner was held in the Dearborn Inn where we stayed for the three day, across the road from Greenfield Village. This Inn is a lovely building with a comfortable, antique furnished lobby, a nice place to sit and talk over the days activities.

My Wife and I visited the Village about fifteen years ago, and I could not believe the growth and change that has taken place in these past years. to see

I am sure one could spend two or three days all the area, including the Museum and the many historical buildings and a tour through the Ford plant, from the making of steel to the finished car.

There are so many things to see, to numerous to mention, but the one I did make a point of visiting was the Edison Work Shop in Menlo Park. This is a two story building, in its original condition as brought up from New Jersey, in fact Mr. Ford had tons of New Jersey earth shipped up so that the shop would sit on its historical ground.

Two lovely Guides give you a running account of its history, contents and there you will see Mr. Edison's original phonograph (cylinder) experiment as it was found, also his chair bolted down in its original position, that he sat in to rest and studied.

Of course the other part of my very short tour of Greenfield Village, due to so many activities, was the Museum to see the collection of vintage radios, tubes.

phonographs and code transmission keys.

There are more than 125 historical subject buildings in Greenfield Village, and these are on named streets so very easy to find by your interesting map obtained for 25 cents at a nearby booth.

The whole complex is beautifully grassed, treed, and flower gardens, even to a covered bridge.

A trip to Mr. Fords Greenfield Village should be on everybody's itinerary sometime in the future.

There were 5 talks presented by A.W.A. speakers but due to the untimely sickness of our very dear friend Fred Hammond there would have been 6 talks, so to fill in Fred's time slot, we were fortunate to have a delightful organ recital by David the Son of Mr. & Mrs Lauren Peckham who handles the Auction with their very able hard working crew and we must not forget Joe Pavak, A.W.A.'s fabulous Auctioneer who, by the way has handled this job for 10 years.

Our organist, Dave, was in his glory, maybe a little nervous, at the beautiful white and gold, 3 keyboard organ, that literally comes up out of the floor.

This was Dave's first try at such an organ, so with only a short morning introduction, for his afternoon debut, he played like a young professional and everyone was delighted with his renditions of numbers we all new and enjoyed.

In closing I cannot say enough for the way the boys of A.W.A. put on each year this wonderful Conference, they must have a magic spell over them, or just damn hard work, as no one could do it any better.

THANKS GANG, from us all, also our sincere thanks to all the nice people at Greenfield Village.

30 Sid Prior

INSURANCE FOR VINTAGE RADIO COLLECTION OR SPECIAL VALUE SETS

Sid has found out that the Co-op Insurance Association will insure your collection under the usual Home and Contents Policy you carry on your home for a 'modest increase in premium' but you must have it appraised by a licensed appraiser first (Consult your yellow pages directory). For further details on what CIA have to offer call your local CIA office.

Do other members have any experience to relate on the subject of insurance?

What do Sets bring ON the Auction Block?

The A.W.A Auction at the 1977 Conference, is one of the highlights of the week end.

A total of 152 items were auctioned off, with a total of \$9600, netting the A.W.A. \$960 which goes toward the Museum and the Association expenses.

SO WHAT WENT FOR WHAT ?

DEFOREST 3 stage rcvr. Model ? fair condition	\$650
PARAGON rcvr. Type R.D.5 Adams Morgan Co.	\$355
AMRAD Det. & 2 stages R.F. rcvr. a two sect. unit American Radio Research Corp.	\$520
GREBE C.R.9 Richmond Hill U.S.A.	\$245
FEDERAL JR. Xtal rcvr.	\$155
PHILMORE " "	\$ 30
ETHERION Xtal rcvr., in a folding wooden case Appr. 3" X 7" Type M.R.101 Mint Condition Mengel Co. A beautiful set.	\$145
R.C.A. RADIOLA 5 2 Sect. Model AAI1400a with speaker	\$240
AMRAD Commercial rcvr. (not working) good Condition	\$285
WESTINGHOUSE AERIOLA AMP. with 199 tubes & spares	\$150
CLAPP EASTHAM RADAK rcvr. Type R.H.M.	\$165
DEFOREST TABLE HIGHBOY with Internal Horn Type F.5	\$200
EDISON MIDGET PHONO. (no head)	\$ 93
MURDOCK COUPLER Fair condition	\$210
Have you a used Myers Tube ? Its worth	\$ 40
If you have a new one in original box with clips	\$?
So you see fellows this is a wonderful Hobby and if you live to be a hundred with a fair collection, you will be rich, but it will be to late, Hi.	

I WOULD LIKE TO TAKE THIS OPPORTUNITY TO WISH
YOU, ONE AND ALL, A VERY MERRY CHRISTMAS AND A
VERY, VERY, HAPPY NEW YEAR.

73 SID PRIOR

DUES

THIS IS THE LAST BULLETIN THAT CAN BE SENT TO
THOSE WHO HAVE NOT YET PAID THEIR '77-78 DUES;
SO PLEASE SEND YOUR \$5 NOW TO AVOID DISAPPOINT-
MENT TO TREASURER JACK KNOTT, 69 ROSSBURN DR.
ETOBICOKE, ONT., CANADA M9C 2P9

David Grimes
75 Varick Street
New York

May 8th,
1934.

Mr. James McDowall
235 West 7th St.
Owen Sound, Ont., Canada

Dear Mr. McDowall:

Your letter of April 3rd which was more recently mailed on April 23rd has finally come to my attention.

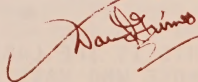
Your interest in radio appeals to me as I have been interested in radio for a great many years -- in fact, I first became interested when I was about your age.

It is awfully hard to select any particular line of radio to follow up, as you have proposed. It is desirable to study and investigate all applications of radio so as to be properly prepared for any opportunity which may arise at any period in your life. Those who have made the biggest advances have been the most all-around trained engineers.

Of course, if you are interested in aviation as well as radio, it is suggested that you "specialize" on aviation radio problems. On the other hand, if you are more inclined to be interested in photography and motion pictures, perhaps you should plan to be one of those in on the ground floor of television when this arrives a few years hence. There are about two dozen different radio engineering professions and you should find opportunity in one or more of them if you generalize at this time. You are too young to consider specialization. Learn all you can about every aspect of radio engineering.

Sincerely yours,

dg;mg

A handwritten signature in dark ink, appearing to read "David Grimes", with a large, sweeping flourish underneath.

David Grimes

75 Varick Street

New York

May 17th,

1934.

Mr. James McDowall
235 West 7th St.
Owen Sound, Ont., Canada

Dear Mr. McDowall:

Your letter of May 10th
accompanied by one from your Father is at hand.

I am indeed glad to hear that
you are going to acquire all the knowledge you can
of radio engineering. This can be obtained from
books in public libraries and I would suggest that
you start with the a,b,c's.

If I were you, I wouldn't
invest any money in television parts. Those that
are available pertain only to an obsolete system
which uses scanning discs. The television of the
future will use cathode tubes.

It is better and cheaper for you
to study television through publications and text
books rather than imperially by means of equipment
which is not very pertinent in the present state of
development.

Sincerely yours,

David Grimes
dg;mg

dg;mg

EVEREADY RADIO IN CANADA

It might come as a surprise to many of the modern generation, although not to CVWA members, that there were over thirty Canadian radio set manufacturers in business in 1929 but only about half a dozen survived the Depression. One typical non-survivor was the Canadian National Carbon Co., Radio Set Division, in Toronto, where Eveready Radio Sets were made.

With the emergence of the broadcasting industry a large U.S. dry battery company, National Carbon Inc., of Cleveland Ohio, parent of the Canadian National Carbon Co., experienced a huge increase in battery sales in the early twenties both in the U.S. and Canada. The company apparently wished to diversify, but at first only merchandized some radio sets made by others. The introduction of batteryless sets likely hastened their plans, so they assembled a staff of radio engineers who developed an exceptional circuit they designated Series 30 that was basically an improved neutrodyne. Superheterodyne design was probably avoided because of patent litigation that dragged on for years in the U.S. courts.

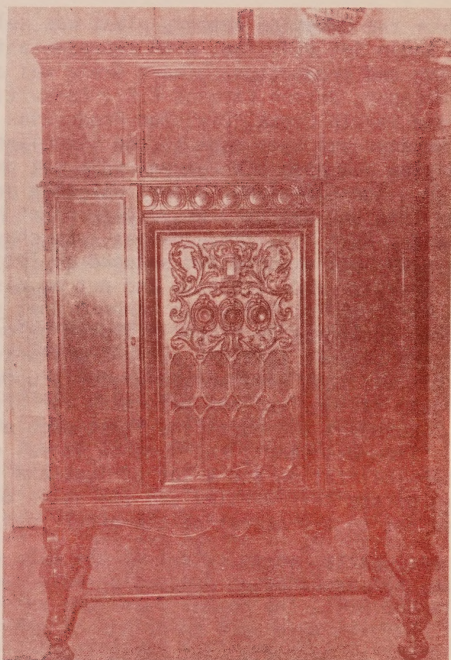
This Series 30 circuit had a special variometer in the antenna circuit that was attached to and coupled to track with the three-gang variable tuning condenser. There also was an externally controlled antenna trimming condenser for fine tuning. This design made possible a sensitivity of four of five microvolts per meter, which was about equal to the sensitivity of many of the superheterodyne sets then on the market. The selectivity was not up to superhet performance but was ample for the fewer number of broadcasting stations then in operation. The only sales problem proved to be selling some prospective customers the idea that a small antenna would be best for an Eveready set. In those days a long, high antenna was usually considered to be the ideal thing to have, because in some older sets the sensitivity was as poor as 300 microvolts per meter. In an Eveready set a long antenna often just brought in more static.

When it was finally decided to manufacture sets in

Canada a team from the Canadian battery plant was selected to organize the Radio Set Division, with representation from sales, engineering and production. Ewart Greig was appointed Division Sales Manager; Joseph Parsons E.E., Consulting Radio Engineer and Harold Cronk, Division Production Manager. The Production Manager was then sent to the Cleveland set factory for training and upon his return radio set production lines were set up. The Cleveland factory was then producing several thousand sets per day but the Toronto plant had to start from scratch. At first, six Canadian-type chassis were laboratory-made in Cleveland and shipped to Toronto to be installed in Canadian-made cabinets and put on display at the Canadian National Exhibition in Toronto that year. Unfortunately they could not be properly tested before shipment from Cleveland because 25-cycle current was unavailable there. The result was that none worked properly upon arrival and the Toronto factory was not yet ready for production. Without meters, equipment and parts the first problem of many had begun. Time was short, but somehow it was solved by guesswork, cannibalization and a lot of luck and the show went on with two of the sets working and the sales department were warned not to try operating the other four.

At first, most parts had to come from the U.S. plant, but all cabinets used in Canadian production were manufactured by Malcolm and Hill, the No-Mar furniture maker in Kitchener, Ont. Efforts were made to obtain as many other made-in-Canada parts as possible, but parts suppliers were also busy. Eveready radio set sales skyrocketed in Canada and almost one hundred employees had to be hired. Every employee required training, for experienced people were working at other set manufacturing plants as all set sales were generally good. Eveready set production peaked at about 250 sets a day as originally planned, but averaged less because of continual material shortages.

Early Canadian Eveready sets had the Series 30 chassis only, but a new Series 50 circuit was introduced later. This screen-grid tube circuit was developed in the U.S. to replace the original Series 30 because of patent difficulties there. National Carbon in the U.S. as well as other manufacturers there had been licensed to use the neutrodyne-type circuit there but a holder of a neutrodyne patent claimed infringements which resulted in the U.S. factory



Combined Radio *and* Phonograph Model 59

BRINGING to any good phonograph record the marvellous wealth and volume of tone which can only be had through dynamic reproduction—or turning instantly to the programs of the evening, the Eveready combined radio and phonograph is an instrument of entertainment without a rival.

Cabinet by Malcolm & Hill, designed exclusively for Eveready and finished in beautiful No-Mar walnut.

Price (Less Tubes) \$435.00

developing the Series 50 circuit and switching their entire production to it. There were no such problems in Canada as most patents here had been pooled in Canadian Radio Patents Ltd. and were under their blanket licence.

Eveready radio set Model 59 was designed in Canada and apparently never made elsewhere. It was a radio-phonograph combination, using a 25-cycle Bodine 78 rpm phono motor and an Audak pickup which used the old steel phonograph needles. The original price of this set retail was \$450 complete with tubes. Only 500 sets of this model were manufactured.

When the Depression became severe the head office of National Carbon in the U.S. decided to cease production permanently there and wrote off a several million dollar loss. Canadian sales had been good and manufacturing costs would be lower with full production, but there was no end in sight to the Depression. Faced with high design and development costs which would have to be continued and now borne entirely by the small Canadian production it was decided to permanently close the Canadian Radio Set Division also.

by Harold W. Cronk

30

SUPERREGENERATIVE RECEPTION

Briefly the principle of superregenerative reception is as follows. Feedback in the familiar regenerative detector is increased past the critical point so as to permit self-oscillation with very rapid buildup. In order to preserve intelligibility, it is arranged that the oscillation is stopped very soon after initiation and then allowed to build up again. This process goes on continuously, and the circuit oscillates in bursts. It is important to note that the amplitude of each oscillation builds up exponentially with time, with the amplitude at the end of each burst being proportional to the signal level at the start.

The frequency of the bursts is usually above the audible range; hence the bursts will not be reproduced at the output of the detector. The oscillation is interrupted by a quenching voltage which may be supplied by the detector itself or by a separate oscillator coupled into the grid circuit. Overleaf is an example of the 'self-quenched' type.

A Single Tube Super-Regenerative Receiver

BY JOHN T. NORTON

Radio News for April, 1923

The use of the super-regenerative circuits has greatly increased the amplifying power and sensitivity of the vacuum tube, and has made possible a really practical receiver employing a small loop aerial and a single vacuum tube. Such a set has been constructed by the writer and has given very gratifying results.

The arrangement of circuits is shown in the diagrams. Fig. 1 is a simplified equivalent circuit, and Fig. 2 is the complete wiring diagram of the set. It will be noticed that the arrangement is very similar to one of the common types of regenerative

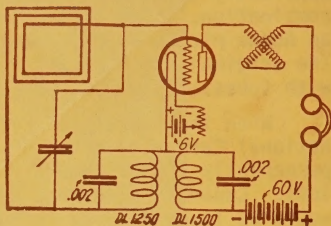


Fig. 1

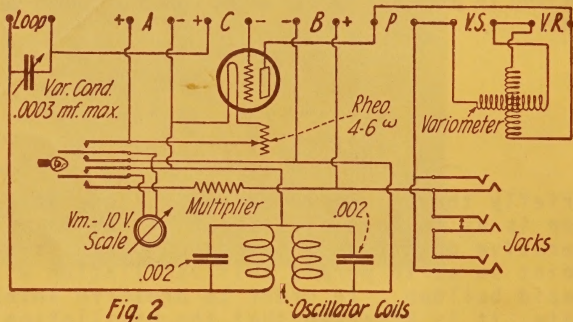


Fig. 2

circuit employing variometer tuning in the plate circuit. The only change is the omission of the grid condenser and leak and the addition of the oscillator coils. These coils make it possible for the tube and its circuits to oscillate at the comparatively low variation frequency which is characteristic of the super-regenerative circuits. This frequency is of the order of 10,000 cycles per second, and the circuit oscillates very readily. The constants of the various component parts of the set are given on the diagram.

The set was designed for experimental purposes, and for this reason, the leads to the various instruments were brought out to a terminal board on the back, so that different connections could be made without changing the permanent wiring of the set. The frame was made of half-inch brass angle, and to this was fastened a quarter-inch bakelite panel the size of which was 11" x 13". The panel was rubbed to a dull

(continued in
Trading Post)